REMARKS

Reconsideration of this application in view of the above amendments and following remarks is respectfully requested. Claims 1-12 are now pending. Claims 1, 3, 4, 6, 7, and 10-12 have been amended. Claim 13 has been cancelled.

Claims 3, 4 and 10-12 have been amended in a consistent manner.

All pending claims stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,977,234 to Kosako et al. ("Kosako"), or under 35 U.S.C. §103(a) as obvious over Kosako and further in view of Published U.S. Application No. 2003/0108781 to Oh et al. ("Oh") or Published U.S. Application No. 2003/0091891 to Yoshida et al. ("Yoshida"). Applicants respectfully disagree.

As an initial matter, Applicants have amended claim 1 to recite a sintered catalyst layer coated on the second gas diffusion layer. Sintering results in a more stable second catalyst layer, and may be accomplished at a temperature between 330°C and 420°C (*see* specification at page 4, lines 27-29). Claims 2-12 depend directly or indirectly from claim 1, and thus all pending claims recite this same limitation.

Kosako does not teach the step of providing a sintered catalyst layer coated on the second gas diffusion layer. Referring to Figure 2 of Kosako, catalyst layer 6 is applied to electrolyte membrane 2, followed by bonding of gas diffusion layer (GDL) 10 to catalyst layer 6. The resulting "half" of the membrane electrode assembly (MEA), shown in Figure 3(a) as 13, is then joined to the other half of the MEA, 14, by hot pressing as indicated by the arrows of Figure 3(b). In this regard, the Examiner is of the opinion that:

> It is well known in the art the higher the hot pressing temperature [the] better the bonding strength between the two layers. Therefore, it would have been obvious to one of ordinary skill in the art to increase the hot pressing temperature to between 330 to 420°C, because one of ordinary skill in the art would recognize that higher hot pressing would promote bonding between the two dissimilar materials. (*See* 2/9/06 Office Action at page 3, last paragraph.)

Applicants respectfully submit that the Examiner's statement is in error for the following reasons.

Claim 1 (as well as all the dependent claims) recite the steps of providing (1) a gas diffusion electrode having a sintered catalyst layer coated on a second gas diffusion layer, (2) a first gas diffusion layer, and (3) a one-side catalyst coated membrane. An MEA is then formed by bonding (by, for example, hot pressing) elements (1), (2) and (3) above. Kosako in no way teaches or suggests the above elements.

While Figure 2(d) of Kosako disclose catalyst layer 6 in contact with GDL 10, it also depicts the same catalyst layer in contact with electrolyte membrane 2. In no instance does Kosako teach or suggest sintering this catalyst layer, which is understandable since such a sintering step would degrade the adjoining electrolyte membrane.

Further, the Examiner's reference to the hot pressing step shown in Figure 3(b) of Kosako is misplaced. In this regard, the Examiner asserts that one skilled in the art could simply increase the temperature of the hot press to a temperature sufficient to sinter the catalyst. If this were done, the electrolyte membranes of Kosako, depicted in Figure 3(b) as layers 2a and 2b, would similarly be degraded. Thus, the very feature lacking in the teaching of Kosako (*i.e.*, a sintered catalyst) would, if formed in the manner proposed by the Examiner, would be detrimental (*e.g.*, degrade) the product for its intended purpose.

In sharp contrast, the present invention provides a sintered catalyst layer on the GDL, absent an electrolyte membrane. Thus, this catalyst layer may be sintered when in contact with the GDL, which is not adversely affected by the elevated temperatures associated with sintering. By the practice of the method recited in claim 1, this sintered catalyst layer is then bonded to the electrolyte membrane, thus achieving the benefits of a sintered catalyst without degradation of the electrolyte membrane in contact therewith.

Kasako simply fails to teach or suggest this aspect of the claimed invention – that is, it does not teach or suggest the step of providing a gas diffusion electrode having a sintered catalyst layer coated on a gas diffusion layer. Further, if the disclosure of Kosako is modified by increasing the hot pressing temperature sufficient to sinter the catalyst layer (as proposed by the Examiner), such an increased temperature would result in a degraded MEA.

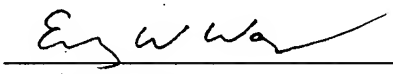
In short, Kasolo fails to establish a *prima facie* showing of obviousness, and the addition of the secondary references (*i.e.*, Oh and/or Yoshida) either alone or in combination does not cure this deficiency. As a result, the burden of providing secondary evidence of nonobviousness has not been shifted to Applicants.

Accordingly, in view of the above amendments and remarks, allowance of claims 1-12 is respectfully requested. A good faith effort has been made to place this application in condition for allowance. However, should any further issue require attention prior to allowance, the Examiner is requested to contact the undersigned at (206) 622-4900 to resolve the same.

Respectfully submitted,

Siyu Ye et al.

SEED Intellectual Property Law Group PLLC



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